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Seroprevalence and susceptibility to primary cytomegalovirus infection among childbearing women

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Background: A maternal primary cytomegalovirus (CMV) infection during pregnancy is more likely to transmit CMV from mother to fetus with more severe sequelae of congenital infection compared with a maternal non-primary CMV infection (reinfection or reactivation). The aim of this study is the evaluation of CMV seroprevalence and susceptibility to primary CMV infection among Greek and immigrant pregnant and non-pregnant women of reproductive age.

Methods & Materials: From January 2011 to September 2013, a total of 3,121 pregnant and non-pregnant women of childbearing age, were tested for CMV-IgG and IgM antibodies. Out of 3,121 women the 1,683 were Greeks and 1,438 were immigrants from developing countries. Of the 1,683 Greeks and 1,438 immigrants the 755 and 815 respectively were pregnant. Detection of CMV-specific IgG and IgM antibodies was carried out by EIA and electrochemiluminescence immunoassay (ABBOTT, AxSYM CMV IgG and IgM Microparticle Enzyme Immunoassay and Roche CMV IgG and IgM electrochemiluminescence immunoassay on cobas e 411 analyzer) according to the manufacturer's instructions.

Results: CMV-IgG and IgM antibodies were detected in 617 (66.49%) and 7 (0.75%) non-pregnant and 537 (71.12%) and 2 (0.26%) pregnant Greek women respectively, whereas CMV IgG and IgM antibodies were detected in 581 (93.26%) and 7 (1.12%) non-pregnant and 789 (96.81%) and 1 (0.12%) pregnant immigrant women respectively. The susceptibility to primary CMV infection of non-pregnant and pregnant Greek women was found to be 33.51% (311/928) and 28.88% (218/755) respectively, whereas the susceptibility to primary CMV infection of no-pregnant and pregnant immigrant women was 6.74% (42/623) and 3.19% (26/815) respectively. Statistical analysis by x^2 test showed significantly higher susceptibility to primary CMV infection in non-pregnant and pregnant Greek women than in immigrant women.

Conclusion: (a) The prevalence of specific antibodies to CMV in pregnant and non-pregnant Greek women of childbearing age is high. (b) The CMV seroprevalence in pregnant and non-pregnant immigrant women is significantly higher than in Greek women. (c) The susceptibility to primary CMV infection is significantly higher in pregnant and non-pregnant Greek women than in immigrants. (d) A remarkable number of Greek women of reproductive age remain at risk of primary CMV infection during pregnancy.

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Diagnostic considerations in a patient with leukemia and diffuse spinal cord enhancement

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Background: A 66 year old male with history of hairy cell leukemia presented with high grade fevers, nausea, vomiting, rash on bilateral lower extremities and unilateral left leg weakness that started a few days ago.

He was in Texas a week ago, where he was hunting in a forest with heavy mosquito and tick burden. He was not on any treatment for hairy cell leukemia, diagnosed three years ago.

On examination, the patient was febrile (101.0 ^{0}F); tachycardiac (130/minute) and lethargic. He was oriented to time, place and person. Chest was clear. No murmurs were appreciated. Abdomen was firm with splenomegaly. Motor strength of the left leg was significantly less than the right. Faint bilateral petechiae were apparent on bilateral calves and feet.

Laboratory work up: WBC count 3400 mm^3/dl; hemoglobin 14.2 g/dl; platelets 64,000/mm^3. Liver and renal function tests were unremarkable. Chest radiograph did not reveal any consolidation. MRI of the head did not show gross pathology, while lumbar and thoracic spine showed diffuse signal abnormality on T2 weighted images. Lumbar puncture showed WBC 315 (40% lymphocytes); glucose 54; protein 227.

Methods & Materials: Patient was empirically treated with doxycycline and high dose steroids and IVIG. Patient was observed in the ICU, where he was briefly intubated.

Results: Serum serologies for RMSF and Lyme disease were negative. CMV, HSV and VZV antibodies were absent in the CSF, as were bacterial and fungal cultures. West Nile virus IgM was elevated in CSF and serum.

Conclusion: Acute motor weakness, fevers, rash and spinal cord enhancement in a patient with leukemia and significant vector exposure poses a diagnostic challenge. Initial therapy should be directed towards possible paraneoplastic syndrome and treatable infectious etiologies affecting the spine, such as neuroborreliosis and RMSF. Other viral etiologies were less likely and usually affect immunosuppressed hosts. This is a unique case of West Nile myelitis without significant brain involvement, presenting with unilateral weakness and petechial rash. Unfortunately there is no definite therapy for this dangerous virus. In our patient, aggressive supportive care and timely diagnosis resulted in a favorable outcome and clinical stability.

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